

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A method for improved inter-domain routing convergence, the method being performed at a first node, the method comprising:

transmitting reason information from [[a]] the first node toward at least one other a second node, wherein the reason information is associated with a route update or withdraw, wherein the reason information comprises a reason for the route update or withdraw, wherein the reason information is adapted to enable identification of candidate routes affected by an event that triggered the route update or withdraw for use by the second node to determine which candidate routes of the second node are affected by the event that triggered the received route update or withdraw and which candidate routes of the second node are not affected by the event that triggered the received route update or withdraw, wherein a candidate route is considered as a transient route if the reason information indicates that the candidate route is to be updated or withdrawn.

2. (cancelled)

3. (cancelled)

4. (currently amended) ~~The method of claim 3, wherein said triplet comprises:~~ A method for improved inter-domain routing convergence, comprising:

transmitting reason information from a node toward at least one other node, wherein the reason information is associated with a route update or withdraw, wherein the reason information comprises a reason for the route update or withdraw, wherein the reason information is adapted to enable identification of candidate routes affected by an event that triggered the route update or withdraw, wherein the reason information is transmitted along with the route update or withdraw, wherein said reason information is

encoded as a triplet within a route update or withdraw message, wherein the triplet comprises:

a type code identifying the reason for the update or withdraw;
an indication of a node pair associated with the update or withdraw; and
an updated cost of a link between the node pair associated with the update or withdraw.

5. (currently amended) The method of claim 1, wherein ~~said~~ the reason information comprises reasons selected from the group consisting of a loss of peering between nodes and a change in a cost of a link between nodes.

6. (cancelled)

7. (currently amended) ~~The method of claim 6, A method for improved inter-domain routing convergence, the method being performed at a node, the method comprising:~~

receiving, at the node, reason information associated with a received route update or withdraw, wherein the reason information comprises a reason for the route update or withdraw; and

using the received reason information to determine which candidate routes of the node are affected by the event that triggered the received route update or withdraw and which candidate routes of the node are not affected by the event that triggered the received route update or withdraw, wherein a candidate route is considered as a transient route if ~~said receiving~~ the node determines from ~~said~~ the reason information that ~~said~~ the candidate route is to be updated or withdrawn.

8. (currently amended) The method of claim 7, wherein ~~said-receiving~~ the node avoids advertising a candidate route considered as a transient route as a preferred route to neighbors of ~~said-receiving~~ the node.

9. (original) The method of claim 7, wherein a route previously considered as transient is considered as stable if the route is not updated within a predetermined time period.

10. (original) The method of claim 1, further comprising transmitting version information for the route update or withdraw.

11. (currently amended) The method of claim 10, wherein ~~said~~ the version information comprises a version of the update or withdraw for each node pair and the change in node pairs from a route previously advertised.

12. (currently amended) The method of claim 10, wherein ~~a node receiving said version information uses said~~ the version information is adapted for use by the second node to determine the stability of candidate routes of ~~said receiving the second~~ node.

13. (previously presented) The method of claim 12, wherein a candidate route is considered as a transient route if a version of a reason is greater than the version of a corresponding node pair in a path of the candidate route being considered.

14. (currently amended) The method of ~~claim 13,~~ claim 7, further comprising:
receiving, at the node, version information associated with the received route update or withdraw, wherein the version information comprises a version of the update or withdraw for each node pair and the change in node pairs from a route previously advertised; and

using the received reason information and the received version information to determine which candidate routes of the node are affected by the event that triggered the received route update or withdraw and which candidate routes of the node are not affected by the event that triggered the received route update or withdraw;

wherein ~~said receiving the~~ node avoids advertising a candidate route considered as a transient route as a preferred route to neighbors of ~~said receiving the~~ node.

15. (cancelled)

16. (cancelled)

17. (currently amended) ~~The apparatus of claim 16,~~ An apparatus for improved inter-domain routing convergence, comprising:

means for identifying reason information associated with a route update or withdraw, wherein the reason information comprises a reason for the route update or withdraw, wherein the reason information is adapted to enable identification of candidate routes affected by an event that triggered the route update or withdraw; and

means for transmitting the identified reason information toward at least one neighboring apparatus;

means for receiving reason information associated with a received route update or withdraw; and

means for using the received reason information to determine which candidate routes are affected by the event that triggered the received route update or withdraw and which candidate routes are not affected by the event that triggered the received route update or withdraw, wherein a candidate route is considered as a transient route if said the apparatus determines from said the received reason information that said the candidate route is to be updated or withdrawn.

18. (currently amended) The apparatus of claim 17, wherein said the apparatus avoids advertising a candidate route considered as a transient route as a preferred route to neighbors.

19. (currently amended) The apparatus of claim ~~[[15]]~~ 17, further comprising:
means for identifying version information for a route update or withdraw; and
means for transmitting the identified version information for the route update or withdraw.

20. (currently amended) The apparatus of claim 19, further comprising:

means for receiving version information ~~with an~~ associated with a received route update or withdraw; and

means for using said ~~the~~ received version information to determine the stability of candidate routes.

21. (currently amended) The apparatus of claim 20, wherein a candidate route is considered as a transient route if ~~said the~~ apparatus determines from said the received version information that a version of a reason is greater than the version of a corresponding node pair in a path of the candidate route being considered.

22. (currently amended) The apparatus of claim 21, wherein ~~said the~~ apparatus avoids advertising a candidate route considered as a transient route as a preferred route to neighbors.

23. (cancelled)

24. (currently amended) ~~The communications network of claim 23, A~~ communications network having improved inter-domain routing convergence, comprising:

a plurality of network devices, each of the network devices comprising a processor and a memory, wherein the network devices perform the steps of:

transmitting reason information associated with a route update or withdraw to neighboring devices, wherein the reason information comprises a reason for the route update or withdraw;

receiving reason information associated with a received route update or withdraw; and

using the received reason information to determine which candidate routes are affected by the event that triggered the received route update or withdraw and which candidate routes are not affected by the event that triggered the received route update or withdraw, wherein a candidate route is considered as a transient

route if a network device determines from said the received reason information that said the candidate route is to be updated or withdrawn.

25. (currently amended) The communications network of claim 24, wherein said the network devices avoid advertising a candidate route considered as a transient route as a preferred route to neighbors.

26. (currently amended) A computer-readable storage medium storing a set of instructions which, when executed by a processor, cause the processor to perform a method for improved inter-domain routing convergence, the method comprising:

transmitting reason information associated with a route update or withdraw, wherein the reason information comprises a reason for the route update or withdraw, wherein the reason information is adapted ~~to enable identification of candidate routes affected by an event that triggered the route update or withdraw~~ for use by a node receiving the reason information to determine which candidate routes of the node are affected by the event that triggered the received route update or withdraw and which candidate routes of the node are not affected by the event that triggered the received route update or withdraw, wherein a candidate route is considered as a transient route if the reason information indicates that the candidate route is to be updated or withdrawn.

27. (currently amended) ~~The~~ A computer-readable storage medium ~~of claim 26, wherein said method further comprises:~~ storing a set of instructions which, when executed by a processor, cause the processor to perform a method for improved inter-domain routing convergence, the method comprising:

receiving reason information associated with a received update or withdraw, wherein the reason information comprises a reason for the route update or withdraw; and

using said received reason information to determine which candidate routes are affected by the event that triggered the route update or withdraw and which candidate routes are not affected by the event that triggered the route update or withdraw, wherein a candidate route is considered as a transient route if the reason information indicates that the candidate route is to be updated or withdrawn.

28. (currently amended) The computer-readable storage medium of claim 27, wherein a candidate route is considered as a transient route if it is determined from ~~said~~ ~~received~~ the reason information that ~~said~~ the candidate route is to be updated or withdrawn.

29. (currently amended) The computer-readable storage medium of claim 28, wherein a candidate route considered as a transient route is avoided being advertised as a preferred route.